

$$(n-1)(n+1)$$

$$\Rightarrow n^2-1 \geq 0 \rightarrow n^2 \geq 1 \rightarrow (n \geq 1, n \leq -1) \rightarrow D: [1, +\infty)$$

$$n-1 \geq 0 \rightarrow n \geq 1$$

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$$\Rightarrow 4-3n \geq 0 \rightarrow n \leq \frac{4}{3}$$

$$4n-3 \geq 0 \rightarrow 4n \geq 3 \rightarrow n \geq \frac{3}{4}$$

$$\rightarrow D: \left[\frac{3}{4}, \frac{4}{3}\right]$$

$$4n \geq a \rightarrow n \geq \frac{a}{4}$$

$$\frac{a}{4} = \frac{b}{1} = 1$$

$$b \geq 3n \rightarrow n \leq \frac{b}{3}$$

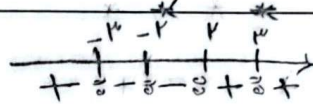
$$a=12, b=4$$

$$\frac{b}{a} = \frac{1}{3}$$

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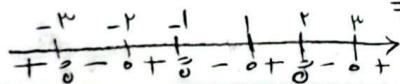
$$\text{الف) } 12-1 \quad (n^2-1)(n^2-9)$$

$$(n-1)(n+1)(n-3)(n+3)$$



$$D = (-\infty, -3) \cup (-1, +\infty) - \{1\}$$

$$\Rightarrow \sqrt{\frac{(n-1)(n-3)(n+3)}{(n+1)(n+3)(n-1)}}$$



$$\Rightarrow D = (-\infty, -3) \cup (-1, +\infty) \cup [1, +\infty)$$

$$\frac{n^2+3n^2-2n-1}{n^2n-4} \Big| \frac{n+1}{n^2n-4} \quad \frac{n^2-2n^2-2n+4}{n^2+n^2} \Big| \frac{n-1}{n^2-2n-4}$$

$$\frac{n^2-2n-4}{(n+3)(n-1)} \quad \frac{-n^2-2n+4}{n^2+n^2} \quad \frac{-4n+4}{+4n-4}$$

$$(n-1)(n+3)$$

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$$\Rightarrow 12[n]-1 \geq 0 \rightarrow 12[n] \geq 1 \rightarrow [n] \geq \frac{1}{12} \rightarrow n \geq \frac{1}{12} \rightarrow D: \left[\frac{1}{12}, +\infty\right)$$

$$\Rightarrow 12[n] \geq 0 \rightarrow [n] \geq 0 \rightarrow n \geq 0 \rightarrow D: [0, +\infty)$$

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$$\text{ب) } \frac{-1}{-1} + \frac{1}{1} \rightarrow [-1, +\infty) - \{1\}$$

$$\frac{4}{4} \rightarrow (-\infty, 4]$$

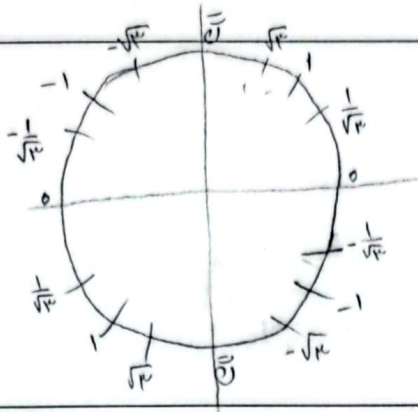
$$D = [-1, 4] - \{1\}$$

$$\Rightarrow [n] \geq 1 \rightarrow n \geq 1$$

$$[n] \leq 1 \rightarrow n \leq 1$$

$$\} \rightarrow D = \emptyset$$

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$$\tan \alpha = \frac{\sin \alpha}{\cos \alpha}$$

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$$\begin{aligned} \text{الف)} \quad & \frac{1}{4} + (-1) + 2(-1) = -\frac{5}{4} \\ \text{ب)} \quad & -(-\frac{\sqrt{3}}{4}) + \frac{\sqrt{3}}{4} - 3(-\frac{\sqrt{3}}{4}) = \frac{5\sqrt{3}}{4} \\ \text{ج)} \quad & -\frac{\sqrt{3}}{4} + 3(\frac{\sqrt{3}}{4}) - 2(\frac{\sqrt{3}}{4}) = \frac{4\sqrt{3}}{4} \\ \text{د)} \quad & \frac{\cos(0)}{1} + \frac{\sin(\pi \times \frac{1}{4})}{1} = 2 \end{aligned}$$

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$$a^2 + \varepsilon a = 2a + a + 2 \rightarrow a^2 + a - 2 = 0 \quad (a+2)(a-1) = 0 \rightarrow a \neq 0 \Rightarrow a = 1$$

$\downarrow \quad \quad \downarrow$
 $-2 \quad \quad 1$

$$f(1) = 1 + \varepsilon = 5$$

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$$n+1 \leq -2$$

$$n \leq -3 \rightarrow n^2 - b$$

$$n \geq -3 \rightarrow a + 2n$$

$$\left\{ \begin{array}{l} n = -3 \\ n = -2 \end{array} \right. \rightarrow a - b = a - 9 \rightarrow a + b = 18$$

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$$\text{الف)} \quad n^3 - \varepsilon n^2 \neq 0 \rightarrow n^2(n - \varepsilon) \neq 0 \rightarrow n \neq 0, n \neq \varepsilon \rightarrow D = \mathbb{R} - \{0, \varepsilon\}$$

$$\text{ب)} \quad 2n^2 + \varepsilon n^2 + 2n + \varepsilon \neq 0$$

$$2n^2(n + \varepsilon) + 2(n + \varepsilon) \neq 0$$

$$(n + \varepsilon)(2n^2 + 2) \neq 0$$

$$n \neq -2$$

$$\rightarrow D = \mathbb{R} - \{-2\}$$

$$2(n^2 + 1) \neq 0$$

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